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ABSTRACT

This study was concerned with determining the validity of the Slosson Intelligence Test (SIT) using the Stanford-Binet Intelligence Scale (S-B), Form L-M as the validity criterion. The sample consisted of 724 students enrolled in 10 public school systems in northeastern Massachusetts. Using the Pearson-Product Moment formula a coefficient of correlation was computed separately for each of 21 categories. Also, the average absolute difference between IQ scores from the two scales was computed for each of the 21 categories. Results showed the correlation between the S-B and SIT to be .92. The overall study average absolute IQ score point difference was 5.46 (range 4.03-5.88), which is approximately the same as the standard error of measurement of 5 IQ score points of the S-B. The findings suggest that the SIT can be used as a valid screening and retesting substitute for the S-B. (Author/AE)

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Today more than ever before, intelligence or academic aptitude tests are playing a major role in student evaluation. Since decisions resulting from psychological evaluation often have a great influence on the present and future welfare of the person tested, high standards concerning reliability and validity must be applied to the selection of the instruments used.

In many instances, the situation demands the use of an individual test such as the Stanford-Binet Intelligence Scale, Form L-M or the Wechsler Intelligence Scale for Children. Unfortunately, individual intelligence tests such as these are time consuming in that they require an average administration time of one hour, and require specialized training to administer and score, usually a full semester course. In addition, growing numbers of students and increasing professional responsibilities are making it difficult for specialized personnel, such as counselors and psychologists, to find time to fulfill the requests for administering individual intelligence tests. Thus, there is a need for a valid individual test of mental ability requiring no specialized training which could be quickly administered and easily scored. Such a test could be used: (1) as a screening device; (2) as a retesting device for both individual and group test results; and (3) to test students who missed the group test administered to a class.

In 1963, Richard L. Slosson constructed the Slosson Intelligence Test (SIT), sometimes referred to as the Short Intelligence Test. The purpose of

its author was to construct an abbreviated form of the Stanford-Binet Intelligence Scale (S-B), Form L-M, which could be used as a screening and retesting instrument and thus provide an opportunity for more students to receive individual intelligence tests; and more released time for counselors and other specialized personnel to devote to their other responsibilities.

The SIT is an individual test of intelligence, for both children and adults, requiring no specialized training, which takes only 15 to 20 minutes to administer and score. A test-retest reliability coefficient of .97 and a standard error of measurement of 4.3 IQ score points is reported by Slosson for 139 subjects ranging from 4 to 50 years old.

The S-B was used as the criterion for establishing the concurrent validity of the SIT. Slosson reported correlation coefficients between these two tests ranging from .90 through .98 (median .96) for subjects whose ages ranged from 4 to 18 and above. Moreover, he reports an average IQ score difference of 5.2 between the two tests (Slosson, 1963).

This study was undertaken as a further validation of the Slosson Intelligence Test (SIT), using the Stanford-Binet Intelligence Scale (S-B), Form L-M, as the validity criterion.

METHOD

The sample consisted of 724 students (ages 6 to 14) enrolled in 10 public school systems in northeastern Massachusetts. Each student was administered both an SIT and an S-B within a two week period of time.

The tests were administered using various combinations of personnel. The administrators were classified in three ways: professionals, trainees and teachers. Professionals were highly trained and experienced personnel in the field of testing (limited to 3 in this study). Trainees were part-time graduate students (mostly teachers) who were enrolled in a course concerned with

administering, scoring and interpreting the S-B and who had administered numerous S-B's under supervision before administering any tests in this study. The Teachers involved had no knowledge concerning the administration of the S-B. The use of personnel in administering the tests was accomplished as follows:

1. 491 subjects were administered both tests by the same administrator;
2. 233 subjects were administered the tests by two different administrators;
3. 304 subjects were administered both tests by a professional, but not necessarily the same administrator;
4. 368 subjects were administered both tests by a trainee, but not necessarily the same administrator;
5. 52 subjects were administered one test by a professional and one by a teacher - neither the teacher nor the professional was aware that the subject had been or was going to be administered the other test.

Pearson-Product Moment correlation coefficients between S-B and SIT scores were computed for each of the following 21 categories.

1. Overall - for all 724 subjects;

2 - 10. Age Levels - for each age level separately (6-14);

11. Male - for all male subjects;
12. Female - for all female subjects;
13. Same Administrator - for both tests;
14. Different Administrator - for each test;
15. Professional Administrator - for both tests, but not necessarily the same administrator;
16. Trainee Administrator - for both tests, but not necessarily the same administrator;
17. Professional and Teacher Administrators - S-B by a professional and the SIT by a teacher, neither was aware the other test was given or was going to be given;

18. S-B Administered First;

19. SIT Administered First;

20. Same Day - when both tests were administered on the same day;

21. Different Day - when the administration of the second test was completed between one and 14 days after the first administration.

Also, the mean absolute difference between IQ scores from the two scales was computed for each of the preceding categories.

RESULTS

Table 1 shows that the Overall study Pearson Product Moment correlation between the S-B and the SIT was .92. Also, the range of correlations for the nine Age Levels (6-14) was from .90 (Ages 6 and 8) to .95 (Age 13). All correlations were significant beyond the .001 probability level. These correlations approximate those reported by Slosson for these Age Levels (.94 to .98).

Table 2 presents the findings concerning additional categories which were either not reported or not substantially validated by Slosson: (1) Sex; (2) Same and Different Administrator; (3) Administrator Status; (4) Order of test administration; and (5) Time Lapse between the First and Second Administration. The range of correlations for these 11 sub-categories was from .92 (Both Trainees) to .94 (Professional and Teachers). All correlations were significant beyond the .001 probability level.

The standard deviations for both Tables 1 and 2 are large when compared to the standard deviation of 16 for the S-B itself, and have perhaps produced somewhat inflated correlation coefficients. However, what is more important than their size, is the correspondence of the S-B and SIT standard deviations.

Since Slosson's purpose was to construct an abbreviated form of the S-B, these high validity coefficients (Tables 1 and 2) are, in a sense, reliability coefficients. At any rate, the fact that the correlation between the S-B and the SIT approximates the reliability of the S-B itself, indicates that the tests appear to be measuring the same thing. It should be noted that the results of this study indicate a statistical relationship between IQ scores from these two tests, and should not be interpreted as meaning that a scorefrom one test can be substituted for a score for the other without regard to what is being measured by the individual or respective tests (Lindquist, 1964; Wesman, 1958).

Table 1 also reveals that the Overall average absolute IQ score point difference between the two tests was 5.46, which is approximately the same as the standard error of measurement of 5 IQ score points of the S-B. The range of average absolute IQ score point differences for the 20 sub-categories (Tablesl and 2) was from 4.03 (Professional and Teachers) to 5.88 (Age 9). These average absolute score point differences present further evidence of the comparability of the scores of the two tests.

Of particular interest were the results obtained when the S-B was administered by a Professional and the SIT by a Teacher (Table 2). In this situation, neither administrator was aware that the subject was going to be administered two tests. It should also be pointed out that the Teachers had no knowledge concerning how to administer or score the S-B. Yet, the correlation between the two tests was .94 and the average score difference was 4.03. Thus, these results confirm those of Slosson, namely, that no specialized training, such

as that required for the S-B, is needed to administer the SIT. This is especially important since it implies that teachers could provide an expanded source of test administrators.

DISCUSSION

The results indicate that for this study consisting of 724 subjects, the SIT appears to be measuring the same thing as the S-B. The results of each of the sub-categories (age, sex, administrator's training, order of administration and time interval between tests) are in close agreement with overall study findings concerning both the correlation between the two tests and their average absolute IQ score point differences. Thus, the findings suggest that the SIT can be used as a valdi screening and retesting substitute for the S-B and provide: (1) an opportunity for more individual intelligence tests to be given; (2) a source of additional test administrators; and (3) more time for specialized personnel to devote to their other responsibilities.

Although the results of this study are highly favorable, additional research in the following areas is needed.

1. Studies of the validity of the Slosson in making judgments concerning placement of children in special education classes and placement of children in classes for the gifted.
2. A study concerning the value of the S-B as a retest instrument when compared to the SIT.
3. A study concerning the relationships among the SIT, the WISC, and the short or abbreviated S-B.

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TABLE 1

Cross Validation of Slosson's Findings
Means, Standard Deviations, Correlations and Average Differences of IQ Scores of the Stanford-Binet Intelligence Scale, Form L-M, and the Slosson Intelligence Test

Category	N	Mean		Standard Deviation		r*	Average Absolute IQ Difference
		S-B	SIT	S-B	SIT		
Overall	724	106.44	107.28	18.20	19.23	.92	5.46
Age 6	77	102.52	102.88	17.36	16.73	.90	5.84
Age 7	88	109.01	109.80	18.19	18.64	.92	5.42
Age 8	85	110.67	112.26	16.57	17.48	.90	5.75
Age 9	83	104.83	106.45	16.45	18.61	.91	5.88
Age 10	87	103.48	104.26	18.64	18.81	.92	5.52
Age 11	80	104.25	105.00	18.99	20.62	.94	5.28
Age 12	72	107.47	108.83	18.05	19.95	.93	5.28
Age 13	80	108.38	108.83	18.60	20.58	.95	4.68
Age 14	72	107.13	106.88	19.12	20.11	.93	5.61

* $<$ .001 (All correlation coefficients are significant beyond the .001 level)

TABLE 2

Additional Findings of This Study
Means, Standard Deviations, Correlations and Average
Differences of IQ Scores of the Stanford-Binet Intelligence Scale,
Form L-M, and the Slosson Intelligence Test

Category	N	Mean S-B	Mean SIT	Standard Deviation S-B	Standard Deviation SIT	r*	Average Absolute IQ Difference
Male	379	106.00	106.82	18.81	19.77	.93	5.20
Female	345	106.92	107.78	17.49	18.72	.91	5.77
Same Administrator	491	108.24	109.37	18.87	18.96	.93	5.50
Different Administrator	233	102.64	102.87	16.03	19.19	.92	5.42
Admin. Status Both Professionals	304	100.90	101.30	15.24	18.58	.93	5.48
Admin. Status Both Trainees	368	110.57	112.02	19.21	18.66	.92	5.62
Admin. Status Professionals and Teachers	52	109.52	108.65	18.20	17.92	.94	4.03
Order S-B First	440	106.50	107.96	17.34	18.45	.93	5.35
Order SIT First	284	106.33	106.22	19.44	20.46	.93	5.68
2nd Administration Same Day	401	104.99	105.75	17.68	18.22	.93	5.14
2nd Administration 1-14 Days	253	111.34	113.64	18.52	19.82	.93	5.64

* $<$ .001 (All correlation coefficients are significant beyond the .001 level)